

andean biofactorie · Food & Agriculture

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Country: Peru · LIMA **Category:** Food & Agriculture **Impact Areas:** Adaptation, Circular Economy **Stage:** Sketches **Team Size:** 3 **Website:** —

Elevator Pitch

Andean BioFactories builds autonomous, solar-powered modules that use inka underground engineering and IoT to grow nutrient dense food in extreme climates. We eliminate fragile supply chains, providing food security with a net zero carbon footprint.

Climate Problem

We tackle food insecurity in regions where extreme frost and fragile supply chains fail. By decentralizing production, we secure nutrition for isolated areas, cutting 90% of water use and eliminating high-carbon transport emissions from the coast.

Solution

We offer autonomous hypogeum biofactories. Using underground thermal insulation and solar-powered IoT, we maintain stable crops in extreme cold, enabling local, net-zero food production in Zero Ag zones where traditional farming is impossible.

Revenue Model

B2B/B2G sales of modular units to mines (ESG) and Govs. Revenue includes hardware, SaaS monitoring fees, and a circular barter system: we exchange tech for local crops to process/resell, ensuring liquidity and market access for remote communities.

Target Market

Target: Remote mines & regional gov in Peru. TAM: \$150M (Local mining). SAM: \$15M (Social budgets for 15 high-altitude mines). SOM: \$600k (15 pilot units in Year 1). We save \$12k/year per site in food transport & waste.

Social Impact

Indigenous Peoples, Refugees - Asylum-seekers and Internally Displaced People, People Living in Extreme Poverty, Women

Demand Evidence

Mines like Antamina face 40% cost surcharges and ESG mandates to cut malnutrition. We fulfill these goals by saving 30% in frost waste and 90% water, turning social liabilities into sustainable, low-OPEX assets with high local demand.

Competitors

Key competitors include Andean Superfood and Andean Foods. In biotech, AS Laboratorios , NeoBiotec , and Agromillora are leaders. Other local actors are Biotechnova and the Camposol biofactory.

Founder Expertise

Our multidisciplinary team combines high-tech with biology: David (MSc Data Science) leads predictive modeling; Andre matos (Mechatronics) designs the autonomous IoT hardware; and Ana sandoval (Agronomics) optimizes crop protocols for extreme environments

External Support

The project is backed by academic R&D through my University Thesis (PUCP), providing a validated technical framework in Mechatronics and Data Science. This includes lab-tested prototypes and peer-reviewed thermal modeling.

Source: ClimateLaunchpad 2026 Application · App ID: 10040 Ingested: 2026-05-25

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